

even a temporary increase in comfort or bodily strength. It appears from this investigation that diabetics gain in physical vigor as they become and remain sugar-free, while overfeeding causes a definite and often a serious loss of strength.

Influence of Large Doses of Digitalis and Digitoxin on the Blood-pressure of Man.—EGGLESTON (*Jour. Am. Med. Assn.*, 1917, lxix, 951) reviews briefly the literature, pointing out the fallacy of arguing the analogy between the toxic action of digitalis bodies on animals and the therapeutic action on man. From his study of fourteen carefully controlled hospital patients, receiving standardized digitalis and digitoxin, Eggleston concludes that digitalis and digitoxin have very little influence on the systolic pressure in either direction; that these drugs tend to produce a significant reduction in the diastolic pressure; and that they tend to produce a material increase in pulse-pressure. An analysis of the relation between the cardiac slowing and the fall in diastolic pressure failed to show that the alteration in the pulse-rate accounted for the changes occurring in the diastolic pressure. Nor was there any relationship between the changes in pulse-rate and those in the systolic pressure. Eggleston believes that neither digitalis nor digitoxin has any direct action on the vessels when given to man even in large therapeutic doses. Admitting that the digitalis bodies are capable of increasing the systolic volume output of the heart, Eggleston explains the changes in systolic, diastolic, and pulse-pressure resulting from the administration of these drugs as follows: Digitalis, by improving the circulation, leads to improved pulmonary circulation with the relief of cyanosis and the abolition of the stimulating effect of carbon dioxide on the vasomotor center. The improved circulation results in the more normal functioning of the various organs and tissues, and tends to restore to normal the several mechanisms by which the circulation is maintained at the most efficient level. On this hypothesis one may expect to find that the net changes in the systolic, diastolic, and pulse-pressure would differ in different cases in order best to meet the conditions prevailing. This is precisely what Eggleston has found to occur in his cases and it also explains the apparently divergent results of different observers. The observation that the pulse-pressure is increased in the majority of cases showing material clinical improvement as a result of digitalis is also in harmony with this hypothesis, since the pulse-pressure is to a certain extent a measure of the efficiency of the circulation through the periphery.

Clinical Studies of the Respiration. III. A Mechanical Factor in the Production of Dyspnea in Patients with Cardiac Disease.—PEABODY reports (*Arch. Int. Med.*, 1917, xx, 433) the effect on the respiration of normal persons and cardiac patients when there is a progressive rise in the carbon dioxide and a progressive decrease in the oxygen of the air breathed. The subjects of the experiment breathed into and out of a closed system until dyspnea became so distressing that the experiment had to be discontinued. Comparing the effects on normal subjects and on cardiac patients, Peabody found that in both classes of persons the rate of breathing was doubled; the depth of breathing was increased fourfold in normal but only twofold in cardiac cases; the

minute volume rose by 700 per cent. in healthy persons but only by 170 per cent. in cardiac patients; the carbon dioxide in the inspired air at the end of the experiment was between 7.11 and 9.22 per cent. for the normals and between 4.27 and 5.62 per cent. for the cardiacs. The cardiac patients became dyspneic when the carbon dioxide in the inspired air was but little more than half that required to produce dyspnea in normal subjects. This does not mean that cardiac patients are more susceptible to carbon dioxide. It means that cardiac patients become dyspneic more easily than healthy subjects because of their inability to increase the depth of breathing in a normal manner and thus prevent the accumulation of carbon dioxide in the blood and tissues.

PEDIATRICS

UNDER THE CHARGE OF

THOMPSON S. WESTCOTT, M.D., AND ALVIN E. SIEGEL, M.D.,
OF PHILADELPHIA.

Comparison between Clinical Examination and Roentgenograms in Diseases of the Chest.—CHAPIN (*Am. Jour. Obst. and Dis. of Women and Children*, October, 1917, vol. lxxvi, No. 478). Owing to the difficulty of keeping little children quiet during exposure it is often hard to interpret heart shadows. A twisting of the body may cause a rotation of the chest so as to exaggerate the heart shadow in any direction. Of 15 cases studied both by x-rays and by physical examination, 7 showed an agreement, or partly agreed, and 7 failed to show a correspondence in the conclusions reached by the two methods. In regard to the lungs a combined study was made in 97 cases. There was agreement in 77 and disagreement in 20 cases. Of the latter 5 gave evidence of lobar pneumonia that was not detected by physical examination; 2 gave physical signs of pneumonia, which were not confirmed by x-rays; 3 showed physical signs of bronchopneumonia not found in x-rays. As a general rule it was found that the x-rays would often give a shadow in the absence of physical signs in congestion, small consolidations, hilum infiltrations, interlobar pleurisy, miliary tuberculosis, and mediastinal tumors.

Hunger in the Infant.—TAYLOR (*Am. Jour. Dis. of Children*, October, 1917, vol. xiv, No. 4) quotes previous writers confirming the fact that hunger contractions are greater in the newborn infant, and states that still greater hunger contractions are present in the prematurely born infants. No relation exists between cyanosis and hunger contractions. In young infants the taking of food into the mouth does not inhibit hunger contractions, but this does occur in older children. This is psychic in character. Even in younger infants the presence of food in the stomach causes reflex inhibition, although in the younger infants it may be only partly developed. During the hunger state